

ENVIRONMENTAL PROTECTION AGENCY (EPA Region 9)

California Air Resource Board

Project Title: Imperial Valley and Mexicali Air Quality Alerts and Forecasting

CARB Technical Contact: Elizabeth Melgoza

Tel: (916) 322-6161

E-mail: [HYPERLINK "mailto:elizabeth.melgoza@arb.ca.gov"]

Administrative Contact: Jer Yang **Tel:** (916) 445-1188

E-mail: [HYPERLINK "mailto:Jer.Yang@arb.ca.gov"]

Funding Amount: FY 18: \$150,000
FY 20: \$12,000

Completion Date: September 30, 2021

Project Description:

The California Air Resources Board (CARB) and the Imperial County Air Pollution Control District (District) operate a network of air quality monitoring stations in the Imperial Valley- Mexicali region. Air quality data collected at these sites is used by various agencies and individuals to assess the nature and extent of air pollution, determine attainment with National and State ambient air quality standards, and evaluate pollutant transport.

Data collected by each agency follows separate streams into National and State databases. CARB operates one air monitoring station in Calexico, California, which is connected to a data acquisition system that allows the retrieval (polling) of air quality data and real-time display on the Internet. The District operates four stations and conducts hourly polling from a central location. Two sites in Mexicali record PM2.5 data and one site records ozone data. Mexicali data will be used to improve the forecast and alerts for the border region. Information provided through the District's website will allow border area residents to take steps to reduce their exposure or be prepared to use prescribed treatments, such as inhalers, when air pollution reaches levels that could adversely affect their asthma or other respiratory ailments.

In addition to providing access to real-time air quality data, the website will allow area residents to sign-up to receive email notifications when air quality in the border region reaches unhealthy levels. This project will provide air quality information, in English and Spanish, to allow residents of Imperial County and Mexicali to take steps to protect their own health when air quality is unhealthy. Air quality reporting allows local residents to plan their strenuous activities for a time when air quality is better. This project could reduce the number and severity of asthma attacks, thereby resulting in fewer missed school days and fewer visits to hospital emergency rooms.

The Contractor will design and maintain the air quality website and develop a model for reporting ozone and particulate matter (PM), PM2.5, and PM10 concentrations. The Contractor will create and provide daily air quality reports for ozone during the ozone-season (March 1 – October 15), create and provide daily air quality reports for PM2.5 and PM10, and create and provide air quality alerts through the webpage, email list serve, and mobile application when local air reaches or is predicted to reach unhealthy levels for Imperial County and Mexicali.

Program Priorities:

The proposed project focuses on the following priorities:

1. **Development of Ozone and PM Reporting Tools:** STI will obtain and review the previous five years of hourly surface and upper-air weather maps as well as the hourly ozone, PM2.5, and PM10 data for the Imperial Valley-Mexicali region to better understand the processes that influence daily ozone, PM2.5, and PM10 concentrations. The products of this review will be guidelines and criteria that can be used to predict daily concentrations of these pollutants.
2. **Operate and Maintain Web Site and Mobile App:** STI will operate and maintain both English and Spanish versions of the website similar to the currently existing site: [HYPERLINK "<http://www.imperialvalleyair.org/>" \h]. STI will display air quality reports and real-time air quality data including ozone, PM10, and PM2.5 as well as the associated health related content on the website. STI will also operate and maintain a mobile application (Imperial Valley Air Quality) to provide hourly air quality and related health information to the public. The app will display real-time data for ozone, PM10, and PM2.5 in English and Spanish. The app will also include a forecast discussion in English, push notifications for alerting users in English or Spanish, and allow users to select their preferred language.
3. **Operate and Maintain an Air Quality Alert System:** STI will operate and maintain an email alert system for Imperial County and Mexicali similar to the system designed and implemented during the 2019 ozone-season: ([HYPERLINK "<http://www.imperialvalleyair.org/airalert.cfm>" \h]). This Internet-based automated notification system allows users to sign up to receive daily emails of air quality reports and alerts when ozone, PM2.5, and PM10 concentrations reach, or are expected to reach, predetermined levels.
4. **Daily Ozone and PM Reporting:** The Contractor will issue current- and next-day ozone (March 1- October 15) and PM air quality reports (January 1

through December 31) seven days a week throughout the duration of the contract for Imperial County and Mexicali. Report notifications to the public will include the rationale for the air quality reports as well as the expected peak ozone and PM concentrations.

5. **Upgrades to Contract:** CARB will work with STI to identify the appropriate upgrades necessary to increase the number of air alert and mobile app subscribers in Imperial Valley and Mexicali. Upgrades could include a new website layout and graphics, adding monthly and annual air quality reports to the website, data analysis for high-PM_{2.5} events, and advertising on social media to build awareness of the air quality alerts and forecasting contract.

Scope of Work

A. Background and Needs Description:

Imperial County is nonattainment for the annual 1987 PM₁₀, 2012 annual PM_{2.5}, and 2008 8-hour ozone standards. Imperial County also has one of the highest asthma rates in the State. It is important for the residents in Imperial County to have access to reliable air quality alerts and forecasts to further protect their health and to limit their exposure to outdoor air pollution when levels are unhealthy. Imperial County is impacted by pollution transported from Mexicali, Mexico. Mexicali currently does not have a system that alerts residents of when air quality is unhealthy so it is important that this information is available to the residents in Mexicali to educate and inform the residents of their local air quality.

B. Strategic Goals:

- Increase education and awareness about ozone, PM_{2.5}, and PM₁₀ pollution in the Imperial Valley-Mexicali region;

- Ensure that residents in the Imperial Valley-Mexicali region are informed of daily and hourly air quality so they can take efforts to protect themselves when pollution levels are unhealthy;
- Provide air quality forecasts to allow residents to better plan for their activities in the week ahead;
- Provide air quality forecasts to assist the Imperial County Air Pollution Control District in implementing their agricultural burn program and to allow better planning of burn and no-burn days;
- Increase the number of air alert and mobile application subscribers by having a social media presence.

C. Project Tasks the contractor is responsible for:

Tasks:

The Project consists of six tasks to be performed by STI. The six tasks for the entire Project are as follows. EPA funding will be used to support all tasks.

Task	Task Description	Deliverable	Due Date
1	Task Management	1.1 Prepare and submit electronic monthly activity reports to CARB	Within ten (10) days after the previous month of
		1.2 Meet with CARB contract lead at least quarterly for status on air quality reporting and discussion of issues	Quarterly, or as needed.
3	Operate and Maintain Website and Mobile App	3.1 Ensure the proper operation of the website 24x7x365. Immediately correct and report problems to CARB and	Within 2 hours of an issue
		3.2 Simple website modifications.	As needed.
		3.9 Develop, implement, and maintain a mobile application for air quality alerts	Within 30 days of contract start date.

4	Air Quality Alert System	4.1 The District shall issue a notification if ozone, PM2.5, or PM10 levels exceed,	Air Quality Alerts to be sent out as needed and with
5	Daily Ozone and PM Reporting	5.1 Disseminate the air quality report every day via email to CARB and the	Daily by 9:30 a.m. (PDT/PST)
		5.2 Distribute the air quality report email	As needed by 11:30 a.m.
6	Upgrades to Contract	Possible Upgrades could include: - New website layout and graphics; - Adding monthly and annual air quality reports to the website;	Within 45 days of contract initiation.